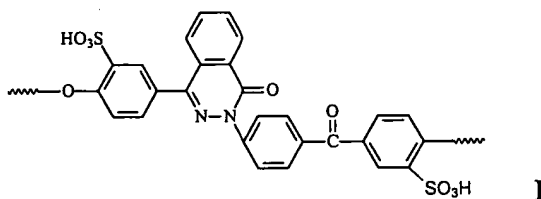


The claims of the application, as amended, are:

1 through 14 (Cancelled)

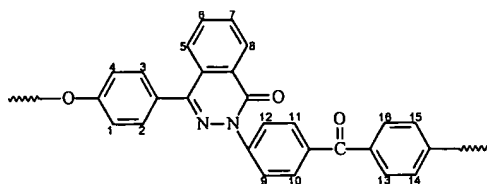
15. (New) Sulfonated poly(phthalazinones) of structural formula I



16. (New) Sulfonated poly(phthalazinones) of structural formula I as defined in Claim 15, in the form of a membrane.

17. (New) Sulfonated poly(phthalazinones) of structural formula I as defined in Claim 15, wherein the degree of sulfonation (Ds) is in the range of 0.6 to 1.0.

18. (New) A process for the preparation of sulfonated poly(phthalazinones) of structural formula I as defined in claim 15, comprising reacting poly(phthalazinones) of formula II



II

with a sulfonating agent

19. (New) A process according to claim 18, wherein the sulfonating agent is a mixture of concentrated sulfuric acid and fuming sulfuric acid.

20. (New) A process according to claim 18, wherein the sulfonating agent is a mixture of 95-98% concentrated sulfuric acid and 27-33% fuming sulfuric acid with different acid ratios.

21. (New) A process according to claim 19, wherein the sulfonating agent is a mixture of 95-98% concentrated sulfuric acid and 27-33% fuming sulfuric acid with different acid ratios.
22. (New) A process according to claim 19, wherein the degree of sulfonation (DS) is controlled by varying the ratio of concentrated sulfuric acid to fuming sulfuric acid and the reaction time.
23. (New) A process according to claim 20, wherein the degree of sulfonation (DS) is controlled by varying the ratio of concentrated sulfuric acid to fuming sulfuric acid and the reaction time.
24. (New) A process according to claim 21, wherein the degree of sulfonation (DS) is in the range of 0.6 to 1.23.
25. (New) A process according to claim 18, including the additional step of casting the sulfonated poly(phthalazinones) to form a membrane.
26. (New) A process according to claim 19, including the additional step of casting the sulfonated poly(phthalazinones) to form a membrane.
27. (New) A process according to claim 20, including the additional step of casting the sulfonated poly(phthalazinones) to form a membrane.
28. (New) A process according to claim 21, including the additional step of casting the sulfonated poly(phthalazinones) to form a membrane.
29. (New) A process according to claim 22, including the additional step of casting the sulfonated poly(phthalazinones) to form a membrane.
30. (New) A process for preparing sulfonated poly(phthalazinone) ether sulfone ketones, comprising reacting a poly(phthalazinone) ether sulfone, with a sulfonating agent.
31. (New) A process according to claim 25, wherein the sulfonating agent is a mixture of concentrated sulfuric acid and fuming sulfuric acid.
32. (New) A process according to claim 26, wherein the sulfonating agent is a mixture of concentrated sulfuric acid and fuming sulfuric acid.
33. (New) A membrane electrode assembly for use in a fuel cell comprising : (a) an anode, (b) a cathode; and (c) a solid polymer electrolyte membrane between said anode and said cathode, said solid polymer electrolyte membrane comprising a sulfonated poly(phthalazinone) of structured formula I as defined in claim 15.